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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/828,163	04/09/2001	Ichirou Miyagawa	Q63607	6555

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EXAMINER	
PHAM, HAI CHI	

ART UNIT	PAPER NUMBER
2861	

DATE MAILED: 03/31/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

Office Action Summary	Application No.	Applicant(s)	
	09/828,163	MIYAGAWA, ICHIROU	
	Examiner	Art Unit	
	Hai C. Pham	2861	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4 and 6-14* is/are rejected.

7)☒ Claim(s) *5 and 15* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *09 April 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. Claims 1-3, 12 and 14 are rejected under 35 U.S.C. 102(e) as being anticipated by Wada et al. (U.S. 6,201,559).

Wada et al. discloses an exposure recording apparatus comprising amount-of-light detecting means (sensor 72) movable into and out of a beam path of the light beams (the sensor 72 being moved along the main scanning direction to and being inserted in and out of the optical path so as to face the respective light shutter elements or LEDs), for detecting amounts of light of the light beams emitted from said light sources (the sensor being used to measure the light quantity of each of the light shutter elements or LEDs), a moving mechanism for moving said amount-of-light detecting means movable into and out of said beam path (via guide shaft 76a driven by the motor 93) (Fig. 11), and amount-of-light adjusting means for adjusting the amounts of light of the light beams emitted from said light sources in order to equalize the amounts of light of the light beams detected by said amount-of-light detecting means (col. 1, lines 16-25) (col. 17, lines 46-64) (col. 22, lines 35-38).

Wada et al. further teaches:

- A plurality of said amount-of-light detecting means (color sensors 72R, 72G and 72B) (Fig. 19),
- the number of said amount-of-light detecting means (72) is smaller than the number of said light sources (light shutter or LED elements 31), and said moving mechanism comprises means for moving said amount-of-light detecting means repeatedly into and out of said beam path of predetermined ones of the light beams (Figs. 15, 16),

The method claims 12 and 14 are deemed to be clearly anticipated by functions of the above structures.

The examiner notes that the intended use statement in the preamble of claim 1 implies no apparent structure of the amount-of-light detecting means, which necessitates the detection of the amount of the light emitted from the light sources. The amount-of-light detecting means as claimed may be applied to a variety of structural exposure recording apparatus besides of having the light sources arranged in the auxiliary scanning direction for recording a two-dimensional image on the photosensitive medium and thus the recitation of the amount-of-light detecting means in relation to rather than part of the exposure recording apparatus does not limit the structure of the exposure recording apparatus itself. This is in clear contrast to claim 5, which claims "a second moving means for moving said amount-of-light detecting means in said auxiliary scanning direction", wherein both the structure of the exposure recording apparatus and the amount-of-light detecting means are given patentable weight (see MPEP 2111.02)

4. Alternatively, claims 1, 3, 6, 12, 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Creutzmann et al. (U.S. 4,780,731).

Creutzmann et al. discloses an exposure recording apparatus (Fig. 1) comprising amount-of-light detecting means (photoelement FE) movable into and out of a beam path of the light beams (the photoelement FE being moved along the main scanning direction to and being inserted in and out of the optical path so as to face the respective LED elements), for detecting amounts of light of the light beams emitted from said light sources (the sensor being used to measure the light quantity of each of the LEDs), a moving mechanism (electric motor M) for moving said amount-of-light detecting means

movable into and out of said beam path, and amount-of-light adjusting means for adjusting the amounts of light of the light beams emitted from said light sources in order to equalize the amounts of light of the light beams detected by said amount-of-light detecting means (col. 2, lines 20-28).

Creutzmann et al. further teaches:

- a plurality of said amount-of-light detecting means (a plurality of photoelements FES) (Fig. 3),
- the number of said amount-of-light detecting means (FE) is smaller than the number of said light sources (LED elements), and said moving mechanism comprises means for moving said amount-of-light detecting means repeatedly into and out of said beam path of predetermined ones of the light beams (Fig. 1),
- said amount-of-light detecting means comprises a photosensor (FE) movable into said beam path obliquely with a sensitive surface thereof lying not perpendicularly to said light beams (the photoelement FE being pivoted into the beam path of the LED elements with the assistance of the electric motor M) (Fig. 2) (col. 5, lines 39-50),

The method claims 12 and 14 are deemed to be clearly anticipated by functions of the above structures.

The examiner notes that the intended use statement in the preamble of claim 1 implies no apparent structure of the amount-of-light detecting means, which necessitates the detection of the amount of the light emitted from the light sources. The

amount-of-light detecting means as claimed may be applied to a variety of structural exposure recording apparatus besides of having the light sources arranged in the auxiliary scanning direction for recording a two-dimensional image on the photosensitive medium and thus the recitation of the amount-of-light detecting means in relation to rather than part of the exposure recording apparatus does not limit the structure of the exposure recording apparatus itself. This is in clear contrast to claim 5, which claims "a second moving means for moving said amount-of-light detecting means in said auxiliary scanning direction", wherein both the structure of the exposure recording apparatus and the amount-of-light detecting means are given patentable weight (see MPEP 2111.02)

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wada et al. in view of Watanabe et al. (U.S. 4,831,626).

Wada et al. discloses all the basic limitations of the claimed invention including the light amount correction look up tables that are periodically renewed but fails to explicitly disclose the tables containing the current-to-amount-of-light conversion.

Regardless, it is well known in the art that a light sensor such as the photodiode (6) disclosed by Watanabe et al. provides an output current proportional to the intensity of the light impinging thereon (Fig. 1).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to set the current-to-amount-of-light conversion tables in the device of Wada et al. since Watanabe et al. teaches this to be known in the art that the output current of the light sensor is the direct value for determining the detected intensity of light.

7. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wada et al. in view of Creutzmann et al.

Wada et al. discloses all the basic limitations of the claimed invention including a reflecting mirror (prism 165 using as a reflecting mirror for reflecting the light beam toward the sensor 72) (Fig. 20), but fails to teach the reflecting mirror being moved obliquely into the light beam path of the light shutter or LEDs.

Creutzmann et al. discloses a photoelement (FE) being pivoted into the light beam path of the LED elements for detecting the amount of light emitted by the LED elements (Fig. 2).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to incorporate the rotating mechanism into Wada et al. device for obliquely inserting the light sensor into the light path of the light sources as taught by Creutzmann et al. The motivation for doing so would have been to provide a

simple and accurate mechanism of moving the sensor into the light path of the light beams.

8. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wada et al. in view of Kerr et al. (U.S. 6,303,937).

Wada et al. discloses all the basic limitations of the claimed invention except for the light reducing means.

Kerr et al. discloses a ceramic attenuator (410) affixed to the surface of the light sensor (422) for attenuating the amount of light emitted from the laser diodes (402) that reach the light sensor (Fig. 3) (col. 7, lines 36-49).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to provide a light attenuator on the surface of the light sensor in the device of Wada et al. as taught by Kerr et al. such that the laser power can be accurately measured as suggested by Kerr et al. at col. 8, lines 61-67.

9. Claims 9-11 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Creutzmann et al. in view of Takata (U.S. 6,590,912).

Creutzmann et al. discloses all the basic limitations of the claimed invention including a temperature sensor (TF) provided on the carrier supporting the LED elements so as to detect and correct the light amount based on the detected operating temperature of the LEDs and a table correction for correcting the amount of light based

on the detected temperature, but fails to teach the temperature sensor sensing the temperature of each individual LED element and a temperature regulating means.

Takata discloses an image forming apparatus comprising a plurality of semiconductor lasers, each of which is provided with a light amount control section, a temperature detecting section and a temperature adjusting section such that the light amount emitted from each laser is within a desired value range (col. 3, lines 24-50).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to provide a temperature detecting means and a temperature adjusting means to each of the light emitting elements of Creutzmann et al. as taught by Takada. The motivation for doing so would have been to be able accurately control both the temperature and the light amount emitted from each individual light emitting element since it is known that each light emitting element has its own characteristics.

Allowable Subject Matter

10. Claims 5 and 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the primary reason for the indication of the allowability of claim 5 is the inclusion therein, in combination as currently claimed, of the limitation "wherein said moving mechanism comprises first moving means for moving said amount-of-light

detecting means movable into and out of said beam path, and second moving means for moving said amount-of-light detecting means in said auxiliary scanning direction", which is not found taught by the prior art of record considered alone or in combination.

The primary reason for the indication of the allowability of claim 15 is the inclusion therein, in combination as currently claimed, of the limitation "wherein said plurality of amount-of-light detecting means movable with respect to said light sources, further comprising the steps of: prior to said step of detecting the amounts of light, detecting the amount of light of the light beam emitted from one of said light sources with said plurality of amount-of-light detecting means, and adjusting said amount-of-light detecting means in order to equalize the detected amounts of light", which is not found taught by the prior art of record considered alone or in combination.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai C. Pham whose telephone number is (571) 272-2260. The examiner can normally be reached on M-F 8:30AM - 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David L. Talbott can be reached on (571) 272-1934. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

HAI PHAM
PRIMARY EXAMINER

March 28, 2005